

Initial Concussion Evaluation Documentation Completeness Among ATs in the Collegiate Setting

Stratmoen EK*, Johnson MM*, Decoster LC*, Hollingworth AT*, Welch Bacon CE†, Valovich McLeod TC‡, Beltz EM‡: *New Hampshire Musculoskeletal Institute, Manchester, NH; †A.T. Still University, Mesa, AZ; ‡ Northern Vermont University, Johnson, VT

Context: Medical documentation serves numerous purposes, including meeting professional standards, recording patient medical history, facilitating continuity of care, and minimizing malpractice exposure. Evidence suggests athletic training documentation is deficient. Objective assessment of documentation completeness is critical to documentation quality improvement efforts. The Concussion Documentation Audit Tool (CDAT) is a valid and reliable tool to assess the completeness of initial concussion evaluation documentation. The purpose of this study was to assess the completeness of initial concussion evaluation documentation among athletic trainers (ATs) in the collegiate setting.

Methods: Ten de-identified initial concussion evaluation notes from a convenience sample of 6 collegiate institutions (60 notes total) were audited for this cross-sectional study. Initial evaluation was operationally defined as all encounters from the day a patient reported a concussion to the AT. Three certified ATs (1-36 years' experience) audited the notes using the CDAT. The CDAT details 38 items essential to complete documentation in 4 clinically-relevant sections: history (7 items), presentation (13), physical exam (9), and assessment and plan (9). Three items are scored "present" or "absent" (scored 1 and 0, respectively), and the remaining items are scored 0-2, indicating criteria are fully (2 points), partially (1), or not met (0). Items with mean scores of < 0.5 and ≥ 1.5 were categorized as "low," and "high", respectively. Total score and scores for each section were divided by total possible points to determine mean completeness percentage. Descriptive analyses of CDAT score were performed by item, section, and total score. Results are presented mean \pm standard deviation.

Results: CDAT total and section completeness were all below 60% (Figure). Six items had low completeness: concussion-related medical conditions (0.4 ± 0.8 points), current medications (0.2 ± 0.6), vital signs (0.00 ± 0.00), upper-extremity coordination (0.41 ± 0.81), differential diagnosis (0.06 ± 0.23), and patient understanding (0.19 ± 0.59). Five items had high completeness: mechanism of injury (1.7 ± 0.5), time elapsed between injury and evaluation (1.6 ± 0.8), level of consciousness (1.5 ± 0.5), symptoms at time of evaluation (1.9 ± 0.5), and plan of care (1.8 ± 0.7).

Conclusions: These data align with previous findings that concussion documentation is incomplete. There were 2 items with low completeness and no items with high completeness in the physical exam section, contributing to its low section score. It is generally assumed that documentation reflects the clinical encounter; however, it is unknown whether the notes audited in this study are deficient due to evaluation incompleteness, documentation incompleteness, or both. Additionally, it is also unknown

how many ATs contributed to the sample of 60 notes. The CDAT can be used to ensure complete concussion evaluation and documentation. Auditing documentation completeness can inform quality improvement efforts by highlighting areas of concussion documentation, and potentially evaluation, that are being overlooked. Future research should include larger samples, more clinical settings, and seek to identify facilitators of and barriers to high quality documentation.

Word Count: 450

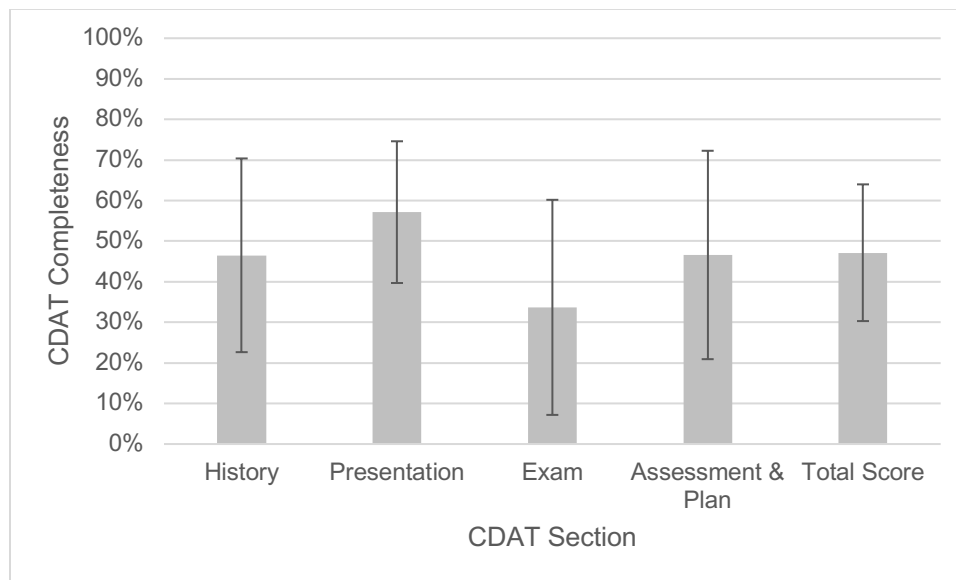


Figure. Mean CDAT completeness \pm standard deviation.

Domain/Task:

- Domain II - all tasks (0201, 0202, 0203, 0204, 0205)
- Domain V - task 4 (0504) ***Primary Domain/Task - if only submit one, submit this one*

Learning Objectives:

- Summarize the trends in concussion documentation completeness.
- Identify areas of initial concussion evaluation documentation that are more likely to be deficient compared to best practice.
- Discuss how audit tools and checklists can be used to improve concussion documentation.

Key Take Home Message: (220 characters or less, including spaces)

Our findings suggest initial concussion documentation among ATs in the collegiate setting is incomplete. Auditing documentation identifies deficiencies which may benefit from quality improvement interventions. (210)

References to be submitted to NATA:

1. Eberman LE, Neil ER, Nottingham SL, Kasamatsu TM, Welch Bacon CE. Athletic trainers' practice patterns regarding medical documentation. *J Athl Train.* 2019;54(7), 822–830.
2. Lempke LB, Schmidt JD, Lynall RC. Athletic trainers' concussion-assessment and concussion-management practices: an update. *J Athl Train.* 2020; 55(1), 17-26.